

REMARKS

Claims 31 to 39 are added, and therefore claims 15 to 39 are currently pending in the present application.

In view of this response, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

It is respectfully requested that the Examiner acknowledge the claim for foreign priority and acknowledge receipt of the certified copy of the priority document in the next Office communication.

Claims 15 to 30 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Application Publication No. 2003/0052690 ("Schoch").

To reject a claim under 35 U.S.C. § 103(a), the Office bears the initial burden of presenting a *prima facie* case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish *prima facie* obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Also, as clearly indicated by the Supreme Court in *KSR*, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. *See KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). In this regard, the Supreme Court further noted that "rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.*, at 1396. Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim features. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Claim 15 relates to a method for determining state variables and parameters of a mathematical energy storage model by a state variable and parameter estimator, including the feature of *causing the state variable and parameter estimator to calculate the state variables and the parameters* of the mathematical energy storage model from operating variables of an energy storage device, in which *the state variable and parameter estimator includes a*

plurality of mathematical submodels that are validly applicable for at least one of different working ranges and different frequency ranges of the energy storage device.

The Schoch reference does not disclose (or even suggest) all of the features of claim 15. The Schoch reference merely refers to a method for determining a battery state of charge based on battery voltage and current. (Schoch, ¶¶ 11 to 13, and 20). The Schoch reference does not disclose (or even suggest) the feature of *causing the state variable and parameter estimator to calculate the state variables and the parameters*, as provided for in the context of claim 15. Indeed, the Schoch reference states that its simple model approach may be used “without the need for a separate parameter estimator.” (Schoch, ¶ 6 (emphasis added)). Therefore, the Schoch reference specifically teaches away from the feature of a state variable and parameter estimator, and thus, does not disclose (or even suggest) the feature of *causing the state variable and parameter estimator to calculate the state variables and the parameters*, as provided for in the context of claim 15.

Further, the Schoch reference does not disclose (or even suggest) the feature in which *the state variable and parameter estimator includes a plurality of mathematical submodels that are validly applicable for at least one of different working ranges and different frequency ranges of the energy storage device*, as provided for in the context of claim 15. The Schoch reference only refers to a single model calculation. (Schoch, Figure 2). Indeed, the Schoch reference states that it is a “simple model approach having few parameters.” (Schoch, ¶ 6). Further, the single, simple model calculation makes an “assessment of the state of charge across the entire battery operating range.” (Schoch, ¶ 15 (emphasis added)). Thus, the Schoch reference does not disclose (or even suggest) the feature in which *the state variable and parameter estimator includes a plurality of mathematical submodels*. In addition, since the Schoch reference does not disclose (or even suggest) a plurality of mathematical submodels, and since the single model of the Schoch reference specifically operates across the entire battery operating range, the Schoch reference does not disclose (or even suggest) the feature of *a plurality of mathematical submodels that are validly applicable for at least one of different working ranges and different frequency ranges of the energy storage device*, as provided for in the context of claim 15.

Accordingly, it is respectfully submitted that claim 15 is allowable, as are its dependent claims 16 to 23.

Claim 24 includes features similar to those of claim 15. Accordingly, it is respectfully submitted that claim 24 is allowable for essentially the same reasons provided above, as are its dependent claims 25 to 30.

New claims 31 to 39 do not add any new subject matter and are supported by the present application, including the specification. Claims 31 to 34 depend from claim 24 and are therefore allowable for the same reasons as claim 24. Claims 35 to 39 depend from claim 15 and are therefore allowable for the same reasons as claim 15.

Accordingly, it is respectfully submitted that claims 15 to 39 are allowable.

CONCLUSION

It is therefore respectfully submitted that all of presently pending claims 15 to 39 are allowable. It is therefore respectfully requested that the rejections (and any objections) be withdrawn, since all issues raised have been addressed and obviated. An early and favorable action on the merits is therefore respectfully requested.

Respectfully submitted,

Dated: _____

5/9/2008

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